INDEX TO VOLUME XXXVI.

October, 1908, to March, 1909.

LEADING ARTICLES.

ACTUAL KNOWLEDGE OF THE COST OF PRODUCTION—OBTAINING *F. E. Webner* 76

AEROPLANES—POWER GENERATION AND TRANSMISSION IN (Illustrated) *W. F. Bradley and H. W. Perry* 630

AFRICA, FRENCH NORTH—THE RAILWAYS OF (Illustrated) *Edgar Allen Forbes* 949

ALLOY STEELS—SPECIAL, AND THEIR MECHANICAL APPLICATIONS *Léon Guillet* 65

AUSTRALIA, WEST—METALLURGICAL PRACTICE IN THE GOLD FIELDS OF (Illustrated) *Arthur Selwyn-Brown* 601

AUSTRALIA, WEST—THE GOLD FIELDS OF (Illustrated) *Arthur Selwyn-Brown* 200

BASIC CAUSE OF INCREASED EFFICIENCY *Walter M. MacFarland* . . 329

BASIS FOR OPERATION AND WAGES—EFFICIENCY AS A (Illustrated) *Harrington Emerson* 33, 170, 337, 676, 815, 908

BEARINGS—THE LUBRICATION OF (Illustrated) *A. L. Campbell* . 469

Becker, O. M. THE NATURE AND CHARACTERISTICS OF THE NEW STEELS (Illustrated) 800, 978

BELT CONVEYORS—THE USE AND PERFORMANCE OF (Illustrated) *Werner Boecklin* 440

Bender, Carl SYSTEMS OF WAGES AND THEIR INFLUENCE ON EFFICIENCY (Illustrated) 498

Bignami, Enrico THE MOST IMPORTANT HYDRO-ELECTRIC INSTALLATION IN EUROPE (Illustrated) 179

Boecklin, Werner THE USE AND PERFORMANCE OF BELT CONVEYORS (Illustrated) 440

BOILERS, STEAM—MEANS AND METHODS FOR HEATING THE FEED WATER OF (Illustrated) *Reginald Pelham Bolton* . . . 393, 645, 781

Bolton, Reginald Pelham MEANS AND METHODS FOR HEATING THE FEED WATER OF STEAM BOILERS (Illustrated) . . 393, 645, 781

Boyer, Jacques MICROSCOPIC METALLOGRAPHY AND ITS EMPLOYMENT IN FRENCH INDUSTRIES (Illustrated) 654

Bradley, W. F., and Perry, H. W. POWER GENERATION AND TRANSMISSION IN AEROPLANES (Illustrated) 630

196071

BUILDING OF THE NEW CANADIAN TRANSCONTINENTAL RAILROAD (Illustrated) *George C. McFarlane* 240
BUREAU OF STANDARDS—THE UNITED STATES NATIONAL (Illustrated) *Herbert T. Wade* 1
BUREAU SYSTEM IN NAVAL ORGANIZATION—THE EFFECTIVENESS OF THE 161
Burns, W. WAYS AND MEANS OF PRODUCING WORK IN THE MACHINE SHOP 435
Campbell, A. L. THE LUBRICATION OF BEARINGS (Illustrated) . . . 469
CANADIAN TRANSCONTINENTAL RAILROAD—THE BUILDING OF THE NEW (Illustrated) *George C. McFarlane* 240
CANAL—THE GEORGIAN BAY SHIP (Illustrated) *J. G. G. Kerry* . 581, 793
CAUSE OF INCREASED EFFICIENCY—THE BASIC *Walter M. McFarland* 329
CHARACTERISTICS OF THE NEW STEELS—THE NATURE AND (Illustrated) *O. M. Becker* 800, 978
Christensen, Chas. C. NEWER ORE-TREATMENT AND METALLURGICAL PROCESSES AND THEIR MACHINERY (Illustrated) 477
COMPLEX SITUATIONS—A SINGLE COST-FINDING SYSTEM FOR (Illustrated) *John Sturgess* 940
CONSERVATION AND USE OF WATER-POWER RESOURCES *H. von Schon* 81, 425
CONSTRUCTION AND USES—STORAGE BATTERIES, THEIR (Illustrated) *Percival Robert Moses* 23
COPPER INDUSTRY—PRODUCTION AND PROSPECTS IN THE *Arthur Selwyn-Brown* 990
CONVEYORS, BELT—THE USE AND PERFORMANCE OF (Illustrated) *Werner Boecklin* 440
COST-FINDING SYSTEM FOR COMPLEX SITUATIONS—A SIMPLE (Illustrated) *John Sturgess* 940
COSTING, FOUNDRY—SYSTEMATIC FOUNDRY OPERATION AND (Illustrated) *C. E. Knoeppel* . . . 89, 211, 457, 618, 765, 968
COST OF PRODUCTION—OBTAINING ACTUAL KNOWLEDGE OF THE *F. E. Webner* 76
COSTS, MANUFACTURING—ERRORS AND DIFFICULTIES IN DETERMINING *W. M. S. Miller* 825
DATA FROM ELECTRIC POWER-PLANT OPERATION—REPRESENTATIVE *Howard S. Knowlton* 833
DEVELOPMENT OF THE SMALL STEAM TURBINE (Illustrated) *Chas. A. Howard* 408, 592
DEVELOPMENTS IN MOTOR VEHICLES FOR INDUSTRIAL PURPOSES—RECENT (Illustrated) *Harry Wilkin Perry* 226, 369
DIFFICULTIES IN DETERMINING MANUFACTURING COSTS—ERRORS AND *W. M. S. Miller* 825
ECONOMY OF THE INDIVIDUAL MOTOR DRIVE FOR MACHINE TOOLS (Illustrated) *Howard S. Knowlton* 347
EFFECTIVENESS OF THE BUREAU SYSTEM IN NAVAL ORGANIZATION . 161
EFFICIENCY AS A BASIS FOR OPERATION AND WAGES (Illustrated) *Harrington Emerson* 33, 170, 337, 676, 815, 998
EFFICIENCY IN THE MANUFACTURE OF TRANSPORTATION—METHODS OF THE SANTA FE. (Illustrated) *Charles Buxton Going* . . . 909
EFFICIENCY—SYSTEMS OF WAGES AND THEIR INFLUENCE ON (Illustrated) *Carl Bender* 498
EFFICIENCY—THE BASIC CAUSE OF INCREASED *Walter M. McFarland* 329
ELECTRIC POWER-PLANT OPERATION—REPRESENTATIVE DATA FROM *Howard S. Knowlton* 833

Emerson, Harrington EFFICIENCY AS A BASIS FOR OPERATION AND WAGES (Illustrated) 33, 170, 337, 676, 815, 998
ERRORS AND DIFFICULTIES IN DETERMINING MANUFACTURING COSTS *W. M. S. Miller* 825
EUROPE—THE MOST IMPORTANT HYDRO-ELECTRIC INSTALLATION IN (Illustrated) *Enrico Bignami* 179
FEED WATER OF STEAM BOILERS—MEANS AND METHODS FOR HEATING THE (Illustrated) *Reginald Pelham Bolton* . . 393, 645, 781
Forbes, Edgar Allen THE RAILWAYS OF FRENCH NORTH AFRICA (Illustrated) 949
FOUNDRY OPERATION AND FOUNDRY COSTING—SYSTEMATIC (Illustrated) *C. E. Knoeppel* 89, 211, 457, 618, 765, 968
FRENCH INDUSTRIES—MICROSCOPIC METALLOGRAPHY AND ITS EMPLOYMENT IN (Illustrated) *Jacques Boyer* 654
FRENCH NORTH AFRICA—THE RAILWAYS OF (Illustrated) *Edgar Allen Forbes*.. 949
FUEL FOR POWER GENERATION *Edward C. Warren*. 255
GENERATION AND TRANSMISSION—POWER, IN AEROPLANES (Illustrated) *W. F. Bradley and H. W. Perry* 630
GEORGIAN BAY SHIP CANAL (Illustrated) *J. G. G. Kerry* . . 581, 793
Going, Charles Buxton METHODS OF THE SANTA FE. EFFICIENCY IN THE MANUFACTURE OF TRANSPORTATION (Illustrated) . . 909
GOLD FIELDS OF WEST AUSTRALIA (Illustrated) *Arthur Selwyn-Brown* 200
GOLD FIELDS OF WEST AUSTRALIA—METALLURGICAL PRACTICE IN THE (Illustrated) *Arthur Selwyn-Brown* 601
Guillet, Léon SPECIAL ALLOY STEELS AND THEIR MECHANICAL APPLICATIONS 65
Hart, Jos. H. THE USES OF MECHANICAL REFRIGERATION IN METALLURGICAL PRACTICE 777
HEATING THE FEED WATER OF STEAM BOILERS—MEANS AND METHODS FOR (Illustrated) *Reginald Pelham Bolton* . . . 393, 645, 781
Howard, Chas. A. THE DEVELOPMENT OF THE SMALL STEAM TURBINE (Illustrated) 408, 592
HYDRO-ELECTRIC INSTALLATION IN EUROPE—THE MOST IMPORTANT (Illustrated) *Enrico Bignami* 179
IMPORTANCE OF THE RAILWAY TO KEY WEST (Illustrated) *William Mayo Venable* 51
IMPORTANT HYDRO-ELECTRIC INSTALLATION IN EUROPE—THE MOST (Illustrated) *Enrico Bignami* 179
INCREASED EFFICIENCY—THE BASIC CAUSE OF *Walter M. McFarland* 329
INDIVIDUAL MOTOR DRIVE FOR MACHINE TOOLS—THE ECONOMY OF THE (Illustrated) *Howard S. Knowlton* 347
INDUSTRIAL PURPOSES—RECENT DEVELOPMENTS IN MOTOR VEHICLES FOR (Illustrated) *Harry Wilkin Perry* 226, 369
INFLUENCE ON EFFICIENCY—SYSTEMS OF WAGES AND THEIR (Illustrated) *Carl Bender* 498
INSTALLATION, HYDRO-ELECTRIC—THE MOST IMPORTANT, IN EUROPE (Illustrated) *Enrico Bignami* 179
INTERNAL COMBUSTION FOR ROTARY PRIME MOVERS *Edward C. Warren* 43
IRRIGATION STATIONS ON THE NILE—MECHANICAL (Illustrated) *J. B. Van Brussel* 749
Kerry, J. G. G. THE GEORGIAN BAY SHIP CANAL (Illustrated) . 581, 793
KEY WEST—IMPORTANCE OF THE RAILWAY TO (Illustrated) *William Mayo Venable* 51

Knoeppel, C. E. SYSTEMATIC FOUNDRY OPERATION AND FOUNDRY COSTING (Illustrated) 89, 211, 457, 618, 765, 968
KNOWLEDGE OF THE COST OF PRODUCTION—OBTAINING ACTUAL *F. E. Webner* 76
Knowlton, Howard S. REPRESENTATIVE DATA FROM ELECTRIC POWER-PLANT OPERATION 833
Knowlton, Howard S. THE ECONOMY OF THE INDIVIDUAL MOTOR DRIVE FOR MACHINE TOOLS (Illustrated) 347
LUBRICATION OF BEARINGS (Illustrated) *A. L. Campbell* 469
MACHINERY—NEWER ORE-TREATMENT AND METALLURGICAL PROCESSES AND THEIR (Illustrated) *Chas. C. Christensen* 477
MACHINE SHOP—WAYS AND MEANS OF PRODUCING WORK IN THE *W. Burns* 435
MACHINE TOOLS—THE ECONOMY OF THE INDIVIDUAL MOTOR DRIVE FOR (Illustrated) *Howard S. Knowlton* 347
MANUFACTURE OF TRANSPORTATION—EFFICIENCY IN THE. METHODS OF THE SANTA FE. (Illustrated) *Charles Buxton Going* . . . 909
MANUFACTURING COSTS—ERRORS AND DIFFICULTIES IN DETERMINING *W. M. S. Miller* 825
McFarland, Walter M. THE BASIC CAUSE OF INCREASED EFFICIENCY 329
McFarlane, George C. THE BUILDING OF THE NEW CANADIAN TRANSCONTINENTAL RAILROAD (Illustrated) 240
MEANS AND METHODS FOR HEATING THE FEED WATER OF STEAM BOILERS (Illustrated) *Reginald Pelham Bolton* . . 393, 645, 781
MEANS OF PRODUCING WORK IN THE MACHINE SHOP—WAYS AND *W. Burns* 435
MECHANICAL APPLICATIONS—SPECIAL ALLOY STEELS AND THEIR *Léon Guillet* 65
MECHANICAL IRRIGATION STATIONS ON THE NILE (Illustrated) *J. B. Van Brussel* 749
MECHANICAL REFRIGERATION IN METALLURGICAL PRACTICE—THE USES OF *Jos. H. Hart* 777
METALLOGRAPHY—MICROSCOPIC, AND ITS EMPLOYMENT IN FRENCH INDUSTRIES (Illustrated) *Jacques Boyer* 654
METALLURGICAL PRACTICE IN THE GOLD FIELDS OF WEST AUSTRALIA (Illustrated) *Arthur Selwyn-Brown* 601
METALLURGICAL PRACTICE—THE USES OF MECHANICAL REFRIGERATION IN *Jos. H. Hart* 777
METALLURGICAL PROCESSES AND THEIR MACHINERY—NEWER ORE-TREATMENT AND (Illustrated) *Chas. C. Christensen* . . . 477
METHODS FOR HEATING THE FEED WATER OF STEAM BOILERS—MEANS AND (Illustrated) *Reginald Pelham Bolton* . . 393, 645, 781
METHODS OF THE SANTA FE. EFFICIENCY IN THE MANUFACTURE OF TRANSPORTATION (Illustrated) *Charles Buxton Going* . . . 909
MICROSCOPIC METALLOGRAPHY AND ITS EMPLOYMENT IN FRENCH INDUSTRIES (Illustrated) *Jacques Boyer* 654
Miller, W. M. S. ERRORS AND DIFFICULTIES IN DETERMINING MANUFACTURING COSTS 825
Moses, Percival Robert STORAGE BATTERIES, THEIR CONSTRUCTION AND USES (Illustrated) 23
MOST IMPORTANT HYDRO-ELECTRIC INSTALLATION IN EUROPE (Illustrated) *Enrico Bignami* 179
MOTOR DRIVE FOR MACHINE TOOLS—THE ECONOMY OF THE INDIVIDUAL (Illustrated) *Howard S. Knowlton* 347

MOTOR VEHICLES FOR INDUSTRIAL PURPOSES—RECENT DEVELOPMENTS IN (Illustrated) *Harry Wilkin Perry* 226, 369
NATIONAL BUREAU OF STANDARDS—THE UNITED STATES (Illustrated) *Herbert T. Wade* 1
NATURE AND CHARACTERISTICS OF THE NEW STEELS (Illustrated) *O. M. Becker* 800, 978
NAVAL ORGANIZATION—THE EFFECTIVENESS OF THE BUREAU SYSTEM IN 161
NEW CANADIAN TRANSCONTINENTAL RAILROAD—THE BUILDING OF THE (Illustrated) *George C. McFarlane* 240
NEWER ORE-TREATMENT AND METALLURGICAL PROCESSES AND THEIR MACHINERY (Illustrated) *Chas. C. Christensen* 477
NEW STEELS—THE NATURE AND CHARACTERISTICS OF THE (Illustrated) *O. M. Becker* 800, 978
NILE—MECHANICAL IRRIGATION STATIONS ON THE (Illustrated) *J. B. Van Brussel* 749
NORTH AFRICA, FRENCH—THE RAILWAYS OF (Illustrated) *Edgar Allen Forbes* 949
OBTAINING ACTUAL KNOWLEDGE OF THE COST OF PRODUCTION *F. E. Webner* 76
OPERATION AND WAGES—EFFICIENCY AS A BASIS FOR (Illustrated) *Harrington Emerson* 33, 170, 337, 676, 815, 998
OPERATION, FOUNDRY, AND FOUNDRY COSTING—SYSTEMATIC (Illustrated) *C. E. Knoeppel* 89, 211, 457, 618, 765, 968
ORE-TREATMENT AND METALLURGICAL PROCESSES AND THEIR MACHINERY—NEWER (Illustrated) *Chas. C. Christensen* 477
ORGANIZATION, NAVAL—THE EFFECTIVENESS OF THE BUREAU SYSTEM IN 161
PERFORMANCE OF BELT CONVEYORS—THE USE AND (Illustrated) *Werner Boecklin* 440
Perry, H. W., and Bradley, W. F. POWER GENERATION AND TRANSMISSION IN AEROPLANES (Illustrated) 630
Perry, Harry Wilkin RECENT DEVELOPMENTS IN MOTOR VEHICLES FOR INDUSTRIAL PURPOSES (Illustrated) 226, 369
POWER GENERATION AND TRANSMISSION IN AEROPLANES (Illustrated) *W. F. Bradley and H. W. Perry* 630
POWER GENERATION—FUEL FOR *Edward C. Warren* 255
POWER-PLANT OPERATION, ELECTRIC—REPRESENTATIVE DATA FROM *Howard S. Knowlton* 833
POWER RESOURCES, WATER—THE CONSERVATION AND USE OF *H. von Schon* 81, 425
PRIME MOVERS, ROTARY—INTERNAL COMBUSTION FOR *Edward C. Warren* 43
PRODUCING WORK IN THE MACHINE SHOP—WAYS AND MEANS OF *W. Burns* 435
PRODUCTION AND PROSPECTS IN THE COPPER INDUSTRY *Arthur Selwyn-Brown* 990
PRODUCTION, COST OF—OBTAINING ACTUAL KNOWLEDGE OF THE *F. E. Webner* 76
PROSPECTS IN THE COPPER INDUSTRY—PRODUCTION AND *Arthur Selwyn-Brown* 990
RAILROAD—THE BUILDING OF THE NEW CANADIAN TRANSCONTINENTAL (Illustrated) *George C. McFarlane* 240
RAILWAYS OF FRENCH NORTH AFRICA (Illustrated) *Edgar Allen Forbes* 949

RAILWAY TO KEY WEST—IMPORTANCE OF THE (Illustrated) *William Mayo Venable* 51
RECENT DEVELOPMENTS IN MOTOR VEHICLES FOR INDUSTRIAL PURPOSES (Illustrated) *Harry Wilkin Perry* 226, 369
REFRIGERATION, MECHANICAL, IN METALLURGICAL PRACTICE—THE USES OF *Jos. H. Hart* 777
REPRESENTATIVE DATA FROM ELECTRIC POWER-PLANT OPERATION *Howard S. Knowlton* 833
RESOURCES, WATER-POWER—THE CONSERVATION AND USE OF *H. von Schon* 81, 425
ROTARY PRIME MOVERS—INTERNAL COMBUSTION FOR *Edward C. Warren* 43
SANTA FE—METHODS OF THE. EFFICIENCY IN THE MANUFACTURE OF TRANSPORTATION (Illustrated) *Charles Buxton Going* . . 909
Selwyn-Brown, Arthur METALLURGICAL PRACTICE IN THE GOLD FIELDS OF WEST AUSTRALIA (Illustrated) 601
Selwyn-Brown, Arthur PRODUCTION AND PROSPECTS IN THE COPPER INDUSTRY 990
Selwyn-Brown, Arthur THE GOLD FIELDS OF WEST AUSTRALIA (Illustrated) 200
SHIP CANAL—THE GEORGIAN BAY (Illustrated) *J. G. G. Kerry* 581, 793
SHOP, MACHINE—WAYS AND MEANS OF PRODUCING WORK IN THE *W. Burns* 435
SIMPLE COST-FINDING SYSTEM FOR COMPLEX SITUATIONS (Illustrated) *John Sturgess* 940
SMALL STEAM TURBINE—THE DEVELOPMENT OF THE (Illustrated) *Chas. A. Howard* 408, 592
SPECIAL ALLOY STEELS AND THEIR MECHANICAL APPLICATIONS *Léon Guillet* 65
STANDARDS—THE UNITED STATES NATIONAL BUREAU OF (Illustrated) *Herbert T. Wade* 1
STEAM BOILERS—MEANS AND METHODS FOR HEATING THE FEED WATER OF (Illustrated) *Reginald Pelham Bolton* . . . 393, 645, 781
STEAM TURBINE—THE DEVELOPMENT OF THE SMALL (Illustrated) *Chas. A. Howard* 408, 592
STEELS, NEW—THE NATURE AND CHARACTERISTICS OF THE (Illustrated) *O. M. Becker* 800, 978
STEELS—SPECIAL ALLOY, AND THEIR MECHANICAL APPLICATIONS *Léon Guillet* 65
STORAGE BATTERIES, THEIR CONSTRUCTION AND USES (Illustrated) *Percival Robert Moses* 23
Sturgess, John A. SIMPLE COST-FINDING SYSTEM FOR COMPLEX SITUATIONS (Illustrated) 940
SYSTEMATIC FOUNDRY OPERATION AND FOUNDRY COSTING (Illustrated) *C. E. Knoeppel* 89, 211, 457, 618, 765, 968
SYSTEM FOR COMPLEX SITUATIONS—A SIMPLE COST-FINDING (Illustrated) *John Sturgess* 940
SYSTEMS OF WAGES AND THEIR INFLUENCE ON EFFICIENCY (Illustrated) *Carl Bender* 498
TRANSCONTINENTAL RAILROAD—THE BUILDING OF THE NEW CANADIAN (Illustrated) *George C. McFarlane* 240
TRANSMISSION—POWER GENERATION AND, IN AEROPLANES (Illustrated) *W. F. Bradley and H. W. Perry* 630

TRANSPORTATION—EFFICIENCY IN THE MANUFACTURE OF, METHODS OF THE SANTA FE. (Illustrated) *Charles Buxton Going* . . 909
TURBINE, STEAM—THE DEVELOPMENT OF THE SMALL (Illustrated) *Chas. A. Howard* 408, 592
UNITED STATES NATIONAL BUREAU OF STANDARDS (Illustrated) *Herbert T. Wade* 1
USE AND PERFORMANCE OF BELT CONVEYORS (Illustrated) *Werner Boecklin* 440
USE OF WATER-POWER RESOURCES—THE CONSERVATION AND *H. von Schon* 81, 425
USES OF MECHANICAL REFRIGERATION IN METALLURGICAL PRACTICE *Jos. H. Hart* 777
USES—STORAGE BATTERIES, THEIR CONSTRUCTION AND (Illustrated) *Percival Robert Moses* 23
Van Brussel, J. B. MECHANICAL IRRIGATION STATIONS ON THE NILE (Illustrated) 749
VEHICLES, MOTOR, FOR INDUSTRIAL PURPOSES—RECENT DEVELOPMENTS IN (Illustrated) *Harry Wilkin Perry* 226, 369
Venable, William Mayo IMPORTANCE OF THE RAILWAY TO KEY WEST (Illustrated) 51
von Schon, H. THE CONSERVATION AND USE OF WATER-POWER RESOURCES 81, 425
Wade, Herbert T. THE UNITED STATES NATIONAL BUREAU OF STANDARDS (Illustrated) 1
WAGES—EFFICIENCY AS A BASIS FOR OPERATION AND (Illustrated) *Harrington Emerson,* 33, 170, 337, 676, 815, 998
WAGES—SYSTEMS OF, AND THEIR INFLUENCE OF EFFICIENCY (Illustrated) *Carl Bender* 498
Warren, Edward C. FUEL FOR POWER GENERATION 255
Warren, Edward C. INTERNAL COMBUSTION FOR ROTARY PRIME MOVERS 43
WATER-POWER RESOURCES—THE CONSERVATION AND USE OF *H. von Schon* 81, 425
WAYS AND MEANS OF PRODUCING WORK IN THE MACHINE SHOP *W. Burns* 435
Webner, F. E. OBTAINING ACTUAL KNOWLEDGE OF THE COST OF PRODUCTION 76
WEST AUSTRALIA—METALLURGICAL PRACTICE IN THE GOLD FIELDS OF (Illustrated) *Arthur Selwyn-Brown* 601
WEST AUSTRALIA—THE GOLD FIELDS OF (Illustrated) *Arthur Selwyn-Brown* 200

REVIEWS, INDEX, AND EDITORIALS.

Aerial Navigation—The Problem of.. 282
Air Blast, Dry—The Gayley..... 706
Alloys—The Nature of..... 850
American Portland Cement Industry—The Future of the..... 1008
Application of Motors to Machine Tools 701
Autogenous Welding—The Repair of Marine Boilers by..... 848
Automatic System for Firing Oil Fuel 860
Automobile Engine of the Future.... 858
Automobile Fuel—Benzol as an..... 105
Bagdad Railway..... 841
Bearing Metals..... 1023
Benzol as an Automobile Fuel..... 105
Boiler Scale—The Prevention of, by Electricity 1021
Boilers, Marine—The Repair of, by Autogenous Welding..... 848
Bonus System of Wages..... 698
Boreholes—A New Method of Extracting Oil from..... 278
Breakages—The Study of..... 272
By-Product in Copper Smelting—Sulphuric Acid as a..... 864
Canal, Panama—Progress on the..... 690
Canals—The Relation of Railways to. 844
Care and Maintenance of Storage Batteries 102
Carrying Trade—The Future of the Pacific 521
Cement Industry—The Future of the American Portland 1008
Characteristics of a Foreman..... 846
Civil Engineering, Engineering Index, 123, 291, 537, 711, 865, 1031
Comparative Efficiency of Marine Engines and Turbines..... 696
Compound Locomotives—The Work of Superheater and..... 1028
Concrete Construction—The Cost of.. 1012
Construction, Concrete—The Cost of 1012
Consumption, Fuel—The Scientific Control of 513
Control of Fuel Consumption—The Scientific 513
Copper Smelting—Sulphuric Acid as a By-Product in..... 864
Copper Tubes, Sheets and Wire—The Direct Production of..... 112
Cost of Concrete Construction..... 1012
Cost of Electric Generators—The Weight and 1015
Depreciation in Manufacturing Plants —Repairs and 519
Direct Production of Copper Tubes, Sheets and Wire..... 112
Dry-Air Blast—The Gayley..... 706
Economy, Fuel—An Electric Power Plant of Notable..... 692
Economy of Exhaust-Steam Turbines 527
Editorial Comment..... 98, 265, 511, 684, 839, 1029
Effect of Humidity on Mine Explosions 115
Efficiency of Marine Engines and Turbines—The Comparative..... 696
Electrical Engineering, Engineering Index.....130, 297, 544, 719, 873, 1039
Electric Furnace—A New Product of the 1018
Electric Furnace, Stassano—Recent Results with the..... 535
Electric Generators—The Weight and Cost of 1015
Electric Hardening Furnace..... 280
Electricity—The Prevention of Boiler Scale by 1021
Electric Marine Propulsion—Steam-. 99
Electric Power Plant of Notable Fuel Economy 692
Electric Steel Furnace..... 704
Electric Traction—Railless..... 286
Electrolytic Production of Iron Sheets and Tubes 524
Elmore Vacuum Process..... 533
Engineering Index..... 123, 291, 537, 711, 865, 1031
Engineering Society — The Public Function of an..... 687
Engine of the Future—The Automobile 858
Engines and Turbines, Marine—The Comparative Efficiency of..... 696
Exhaust-Steam Turbines—The Economy of 527
Explosions, Mine—The Effect of Humidity on 115
Explosives—Recent Progress in..... 1025
Extracting Oil from Boreholes—A New Method of..... 278
Fighting Mine Fires—Sulphur Dioxide for 285
Fires, Mine—Sulphur Dioxide for Fighting 285
Firing Oil Fuel—An Automatic System for 860
Foreman—The Characteristics of a.. 846
Freight, Perishable—The Pre-Cooling of 288
Fuel, Automobile—Benzol as an..... 105
Fuel Consumption — The Scientific Control of 513
Fuel Economy, Notable—An Electric Power Plant of..... 692
Fuel, Oil—An Automatic System for Firing 860
Fuel—Oil, on Shipboard..... 694
Function of an Engineering Society—The Public 687
Furnace—An Electric Hardening.... 280
Furnace, Electric—A New Product of the 1018

Furnace Gases, Waste—The Utilization of 530
Furnace, Stassano Electric—Recent Results with the..... 535
Furnace—The Electric Steel..... 704
Future of the American Portland Cement Industry..... 1008
Future of the Pacific Carrying Trade 521
Gases, Waste Furnace—The Utilization of 530
Gasolene Turbine—The Possibilities of the 708
Gas Producer, Suction—The Use of Steam in the..... 275
Gayley Dry-Air Blast..... 706
Generators—The Weight and Cost of Electric 1015
Gold Mining in the Strait of Magellan 1005
Harbor Work—Power for..... 270
Hardening Furnace—An Electric.... 280
Hardness—A New Method of Testing 106
High-Speed Tools—The Manufacture of 856
Humidity of Mine Explosions—The Effect of 115
Impact Test—The Value of the..... 853
India—A Railway to..... 1014
Industrial Economy, Engineering Index.....134, 303, 549, 723, 879, 1045
Influence of Silicon on the Properties of Iron 516
Iron Sheets and Tubes—The Electrolytic Production of..... 524
Iron—The Influence of Silicon on the Properties of 516
Japanese Merchant Marine..... 108
Japan—Shipbuilding in 267
Locomotives—The Use of Superheated Steam in 118
Locomotives—The Work of Superheater and Compound..... 1028
Machine Tools—The Application of Motors to 701
Maintenance of Storage Batteries—The Care and..... 102
Manufacture of High-Speed Tools... 856
Manufacturing Plants—Repairs and Depreciation in 519
Marine and Naval Engineering, Engineering Index, 136, 304, 550, 725, 880, 1047
Marine Boilers—The Repair of, by Autogenous Welding 848
Marine Engines and Turbines—The Comparative Efficiency of..... 696
Marine Propulsion—Steam-Electric.. 99
Marine—The Japanese Merchant.... 108
Mechanical Engineering, Engineering Index.....137, 305, 552, 728, 881, 1048
Merchant Marine—The Japanese.... 108
Metallographic Study of Ore Deposits 529
Metals—Bearing 1023
Method of Extracting Oil from Boreholes—A New 278
Method of Testing Hardness—A New 106
Mine Explosions—The Effect of Humidity on 115
Mine Fires—Sulphur Dioxide for Fighting 285
Mining and Metallurgy, Engineering Index.....146, 316, 564, 737, 892, 1059
Mining in the Strait of Magellan—Gold 1005
Motors—The Application of, to Machine Tools 701
Nature of Alloys..... 850
New Method of Extracting Oil from Boreholes 278
New Method of Testing Hardness... 106
New Product of the Electric Furnace 1018
New York Subway—The Ventilation of the 120
Notable Fuel Economy—An Electric Power Plant of..... 692
Oil from Boreholes—A New Method of Extracting 278
Oil Fuel—An Automatic System for Firing 860
Oil Fuel on Shipboard..... 694
Ore Deposits—The Metallographic Study of 529
Pacific Carrying Trade—The Future of the 521
Panama Canal—Progress on the..... 690
Perishable Freight—The Pre-Cooling of 288
Plants, Manufacturing—Repairs and Depreciation in 519
Platinum Industry—The Russian.... 111
Portland Cement Industry, American—The Future of the..... 1008
Possibilities of the Gasolene Turbine. 708
Power for Harbor Work..... 270
Power Plant of Notable Fuel Economy—An Electric 692
Pre-Cooling of Perishable Freight... 288
Prevention of Boiler Scale by Electricity 1021
Problem of Aerial Navigation..... 282
Producer, Suction Gas—The Use of Steam in the..... 275
Production of Copper Tubes, Sheets and Wire—The Direct..... 112
Production of Iron Sheets and Tubes—The Electrolytic 524
Product of the Electric Furnace—A New 1018
Progress in Explosives—Recent..... 1025
Progress on the Panama Canal..... 690
Properties of Iron—The Influence of Silicon on the..... 516
Propulsion—Steam-Electric Marine .. 99
Public Function of an Engineering Society 687
Railless Electric Traction..... 286
Railway Engineering, Engineering Index.....153, 322, 572, 743, 899, 1066
Railways—The Relation of, to Canals 844
Railway—The Bagdad 841
Railway to India..... 1014
Recent Progress in Explosives..... 1025
Recent Results with the Stassano Electric Furnace 535
Relation of Railways to Canals..... 844
Repair of Marine Boilers by Autogenous Welding 848

Repairs and Depreciation in Manufacturing Plants 519
Results with the Stassano Electric Furnace—Recent 535
Russian Platinum Industry..... 111
Scale, Boiler—The Prevention of, by Electricity 1021
Scientific Control of Fuel Consumption 513
Sheets and Tubes, Iron—The Electrolytic Production of 524
Sheets, Tubes and Wire—The Direct Production of Copper..... 112
Shipboard—Oil Fuel on..... 694
Shipbuilding in Japan..... 267
Silicon—The Influence of, on the Properties of Iron..... 516
Smelting, Copper—Sulphuric Acid as a By-Product in..... 864
Society—The Public Function of an Engineering 687
Stassano Electric Furnace—Recent Results with the 535
Steam-Electric Marine Propulsion... 99
Steam in the Suction Gas Producer—The Use of..... 275
Steam, Superheated, in Locomotives—The Use of..... 118
Steam Turbines, Exhaust—The Economy of 527
Steel Furnace—The Electric..... 704
Storage Batteries—The Care and Maintenance of 102
Strait of Magellan—Gold Mining in the 1005
Street and Electric Railways, Engineering Index, 157, 324, 576, 746, 902, 1069
Study of Breakages..... 272
Study of Ore Deposits—The Metallographic 529
Subway, New York—The Ventilation of the 120
Suction Gas Producer—The Use of Steam in the..... 275
Sulphur Dioxide for Fighting Mine Fires 285
Sulphuric Acid as a By-Product in Copper Smelting 864
Superheated Steam in Locomotives—The Use of 118
Superheater and Compound Locomotives—The Work of..... 1028
System for Firing Oil Fuel—An Automatic 860
System of Wages—The Bonus..... 698
Test, Impact—The Value of the..... 853
Testing Hardness—A New Method of 106
Tools, High-Speed—The Manufacture of 856
Traction, Electric—Railless..... 286
Tubes, Iron Sheets and—The Electrolytic Production of..... 524
Tubes, Sheets and Wire—The Direct Production of Copper..... 112
Turbine, Gasolene—The Possibilities of the 708
Turbines, Exhaust-Steam—The Economy of 527
Turbines, Marine Engines and—The Comparative Efficiency of..... 696
Use of Steam in the Suction Gas Producer 275
Use of Superheated Steam in Locomotives 118
Utilization of Waste Furnace Gases.. 530
Vacuum Process—The Elmore..... 533
Value of the Impact Test..... 853
Ventilation of the New York Subway 120
Wages—The Bonus System of..... 698
Waste Furnace Gases—The Utilization 530
Weight and Cost of Electric Generators 1015
Welding, Autogenous—The Repair of Marine Boilers by 848
Wire, Sheets and Tubes—The Direct Production of Copper..... 112
Work of Superheater and Compound Locomotives 1028